FIG.1

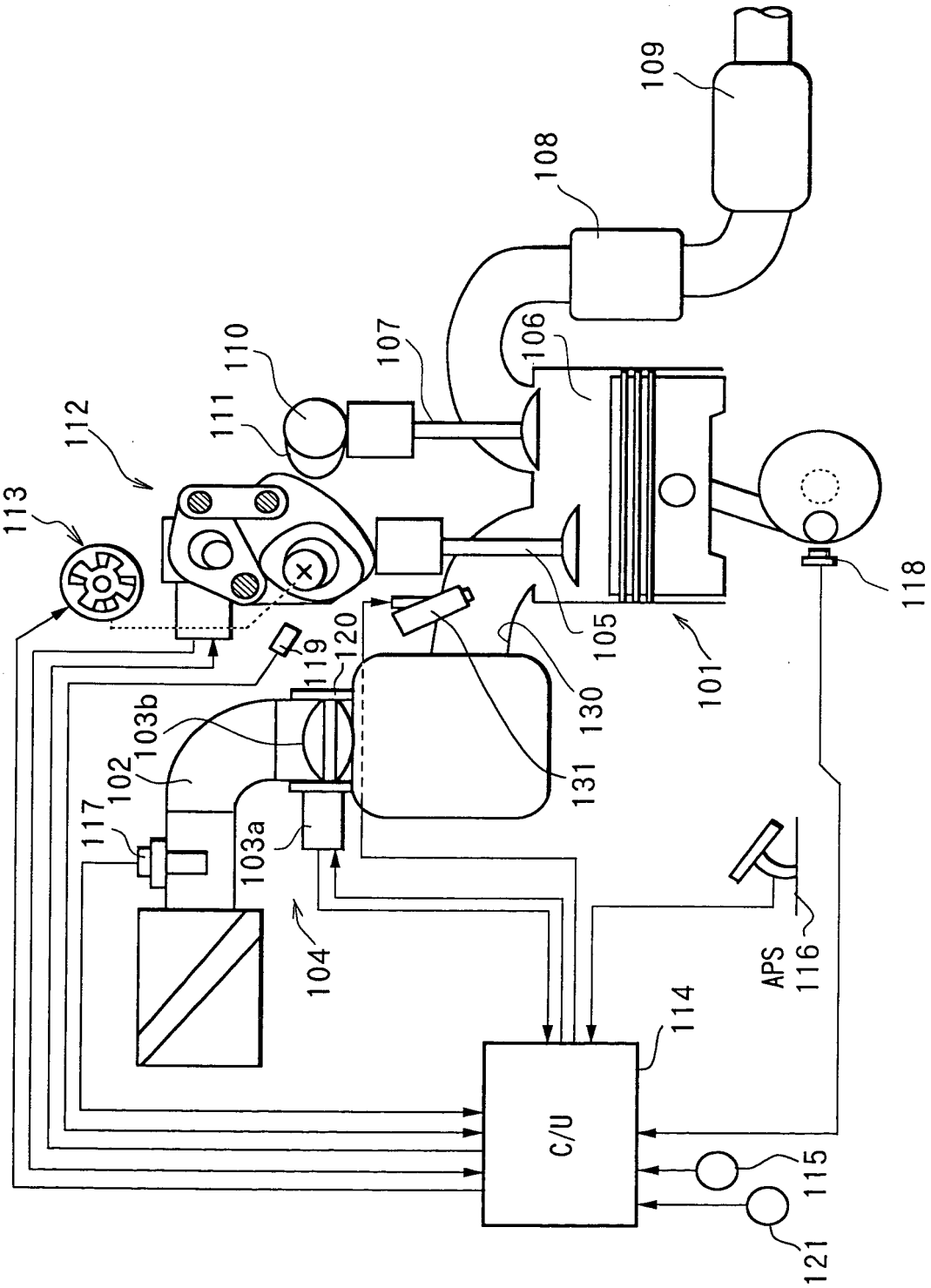

109
108
106
107
110
111
112
113
118
105
101
120
119
130
131
103b
102
117
103a
104
APS
116
114
C/U
115
121

FIG.2

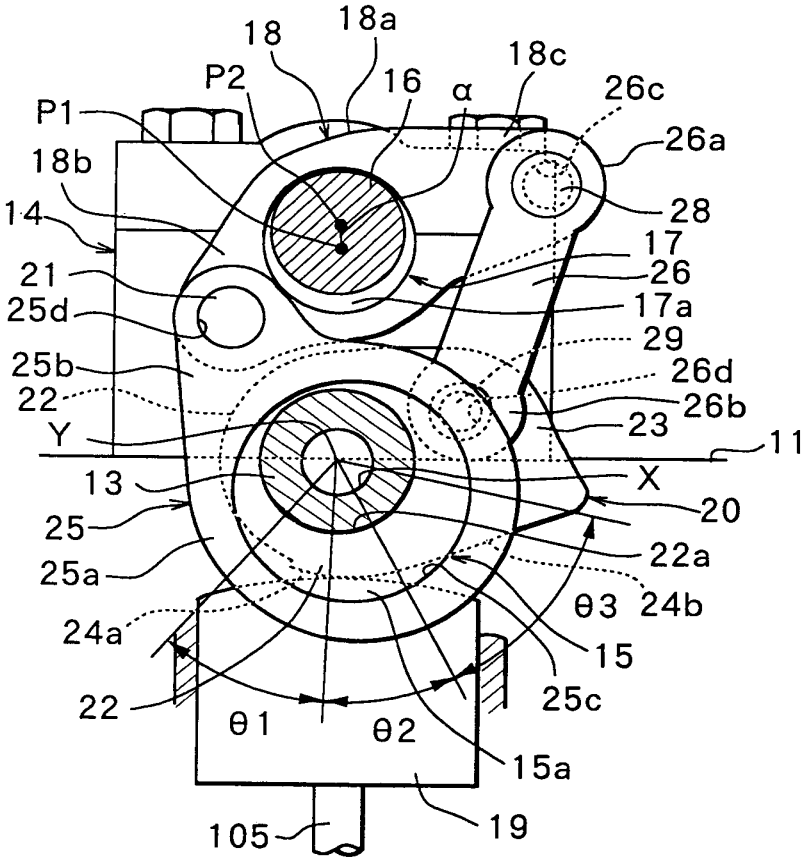

18
18a
18c
P2
16
α
26c
P1
26a
18b
28
14
17
21
26
25d
17a
29
25b
26d
22
26b
Y
23
11
13
X
20
25
22a
25a
θ3
24b
24a
15
22
25c
θ1
θ2
15a
105
19

FIG.3

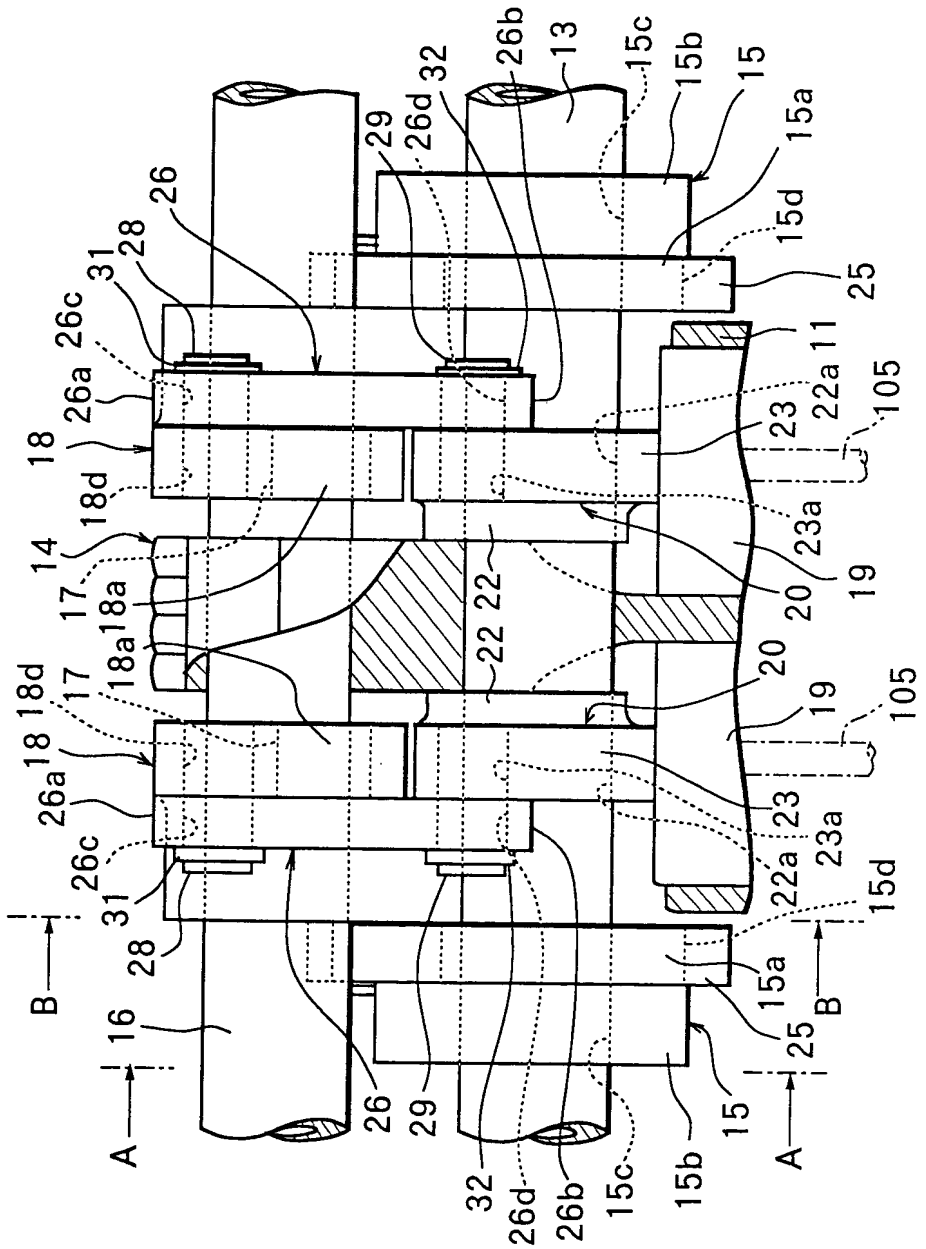

26b
13
15c
15b
15
32
29
26d
15a
26
28
31
15d
25
26c
26a
11
22a
105
18
23
18d
23a
14
17
18a
20
19
22
B
16
A
15
25
15d
23a
22a
23
105
19
20
18
18d
17
18a
26a
26c
31
28
B
A
26
29
32
26d
26b
15c
15b
15

FIG.4

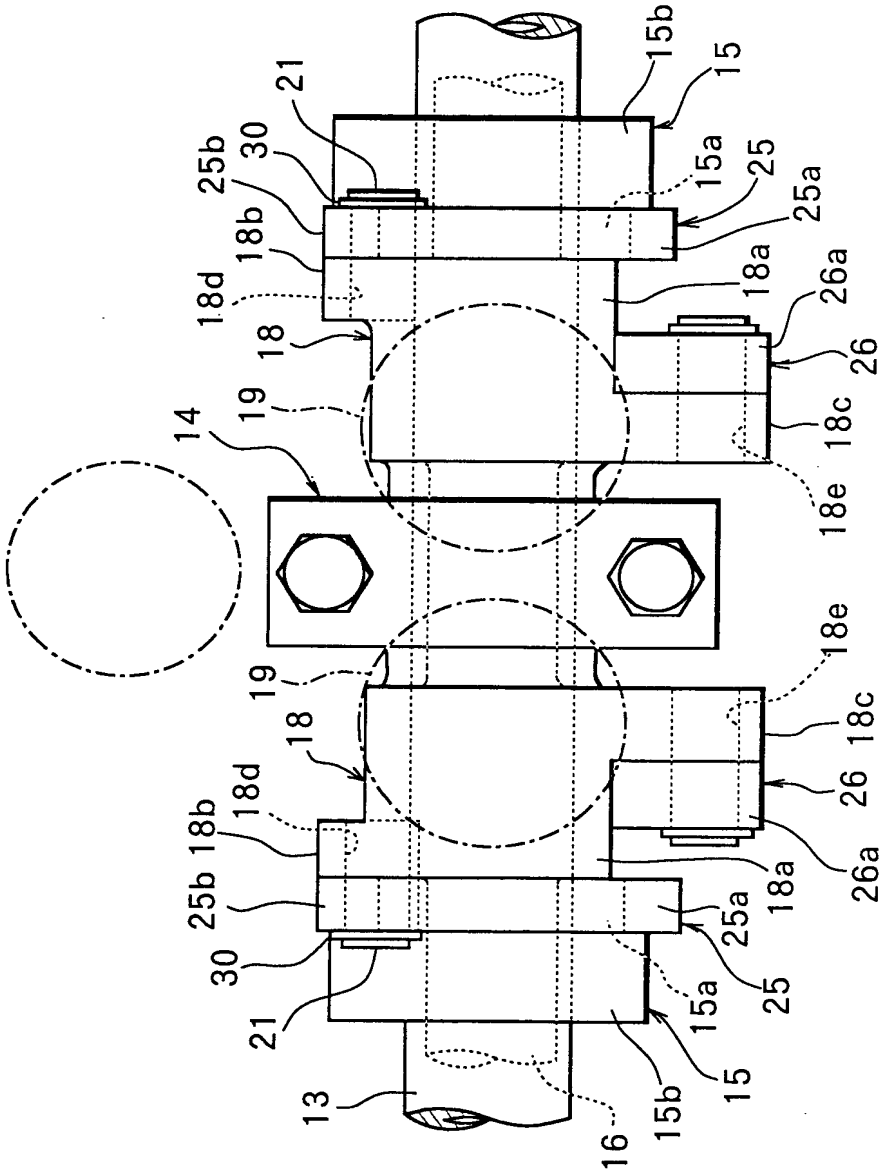

15b
15
21
30
25b
15a
25
25a
18b
18a
18d
26a
18
26
19
18c
14
18e
18e
19
18c
18
26
18d
18b
26a
25b
18a
25a
30
25
15a
21
15
13
15b
16

FIG.5

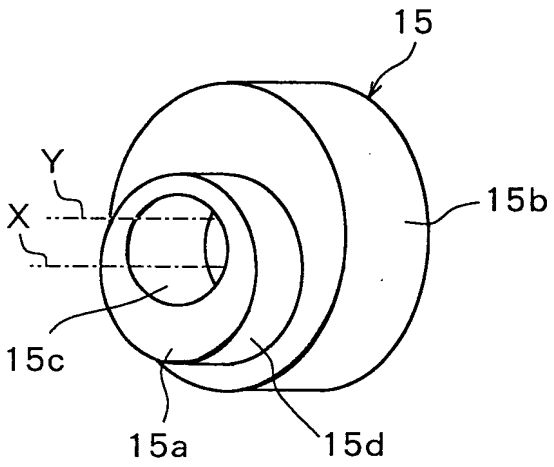


FIG.6

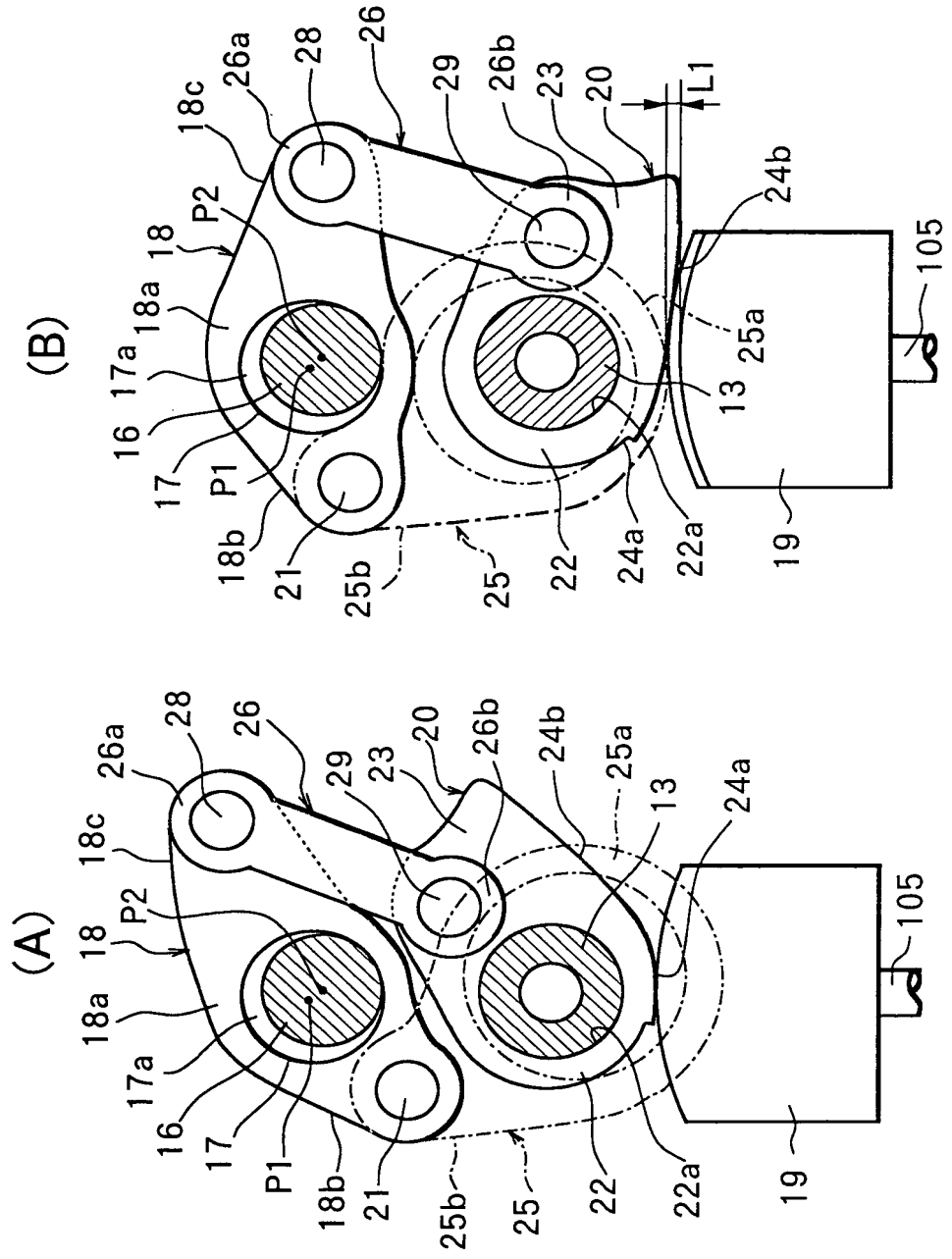

(A)
(B)
26a
28
26
29
23
20
26b
24b
25a
13
24a
18c
P2
18
18a
17a
16
17
P1
18b
21
25b
25
22
22a
19
105
L1

FIG.7

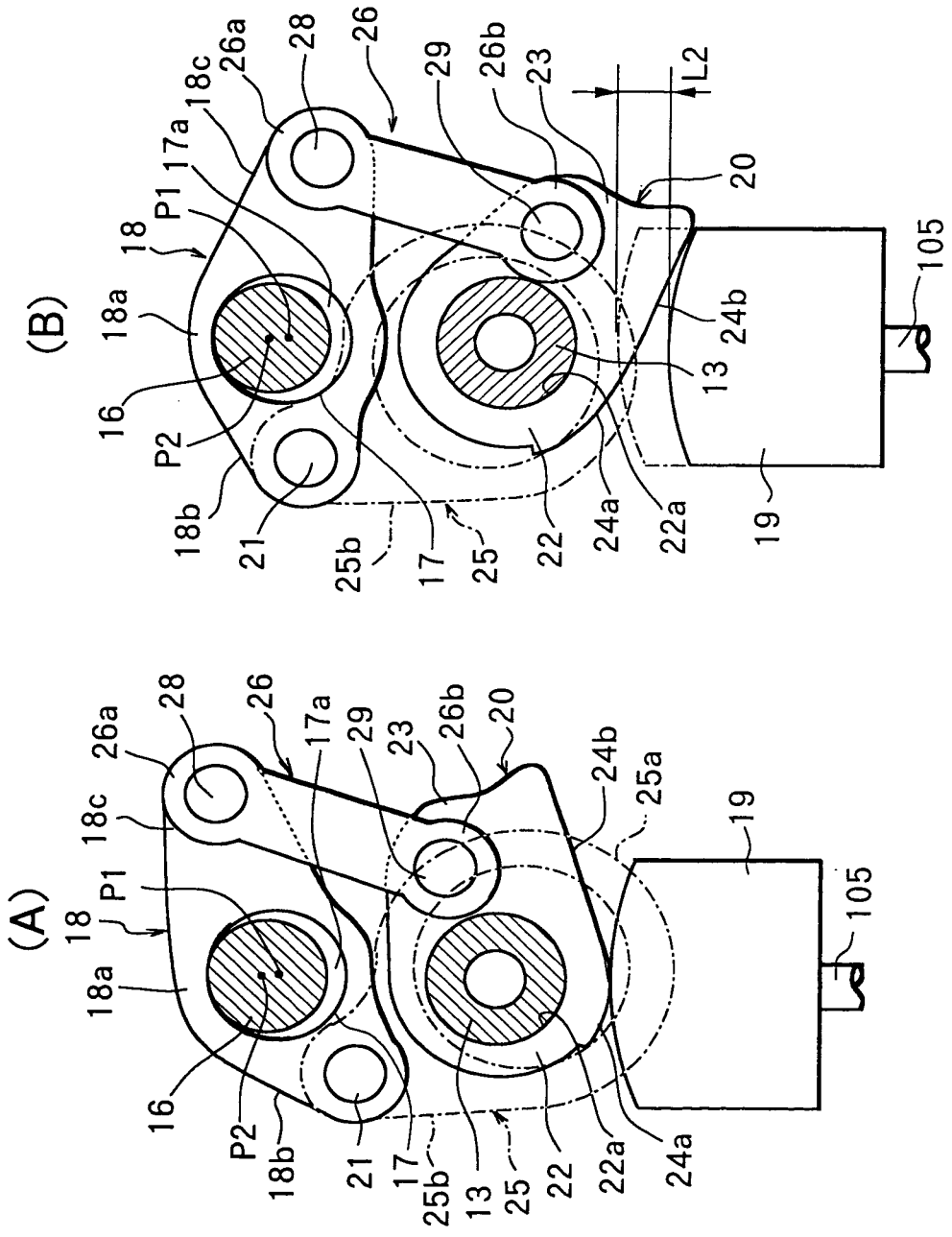

(A)
(B)
16
18
18a
18b
18c
P1
P2
17
17a
21
22
22a
23
24a
24b
25
25a
25b
26
26a
26b
28
29
13
19
20
105
L2

FIG.8

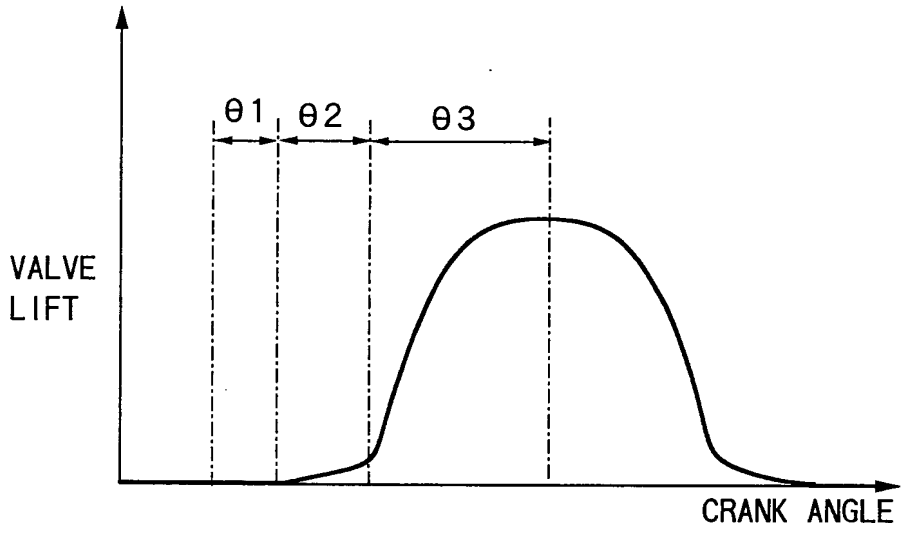

θ1
θ2
θ3
VALVE
LIFT
CRANK ANGLE

FIG.9

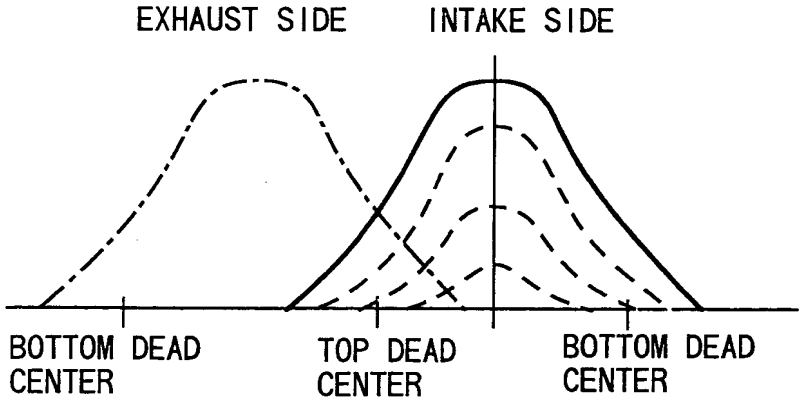

EXHAUST SIDE
INTAKE SIDE
BOTTOM DEAD
CENTER
TOP DEAD
CENTER
BOTTOM DEAD
CENTER

FIG.10

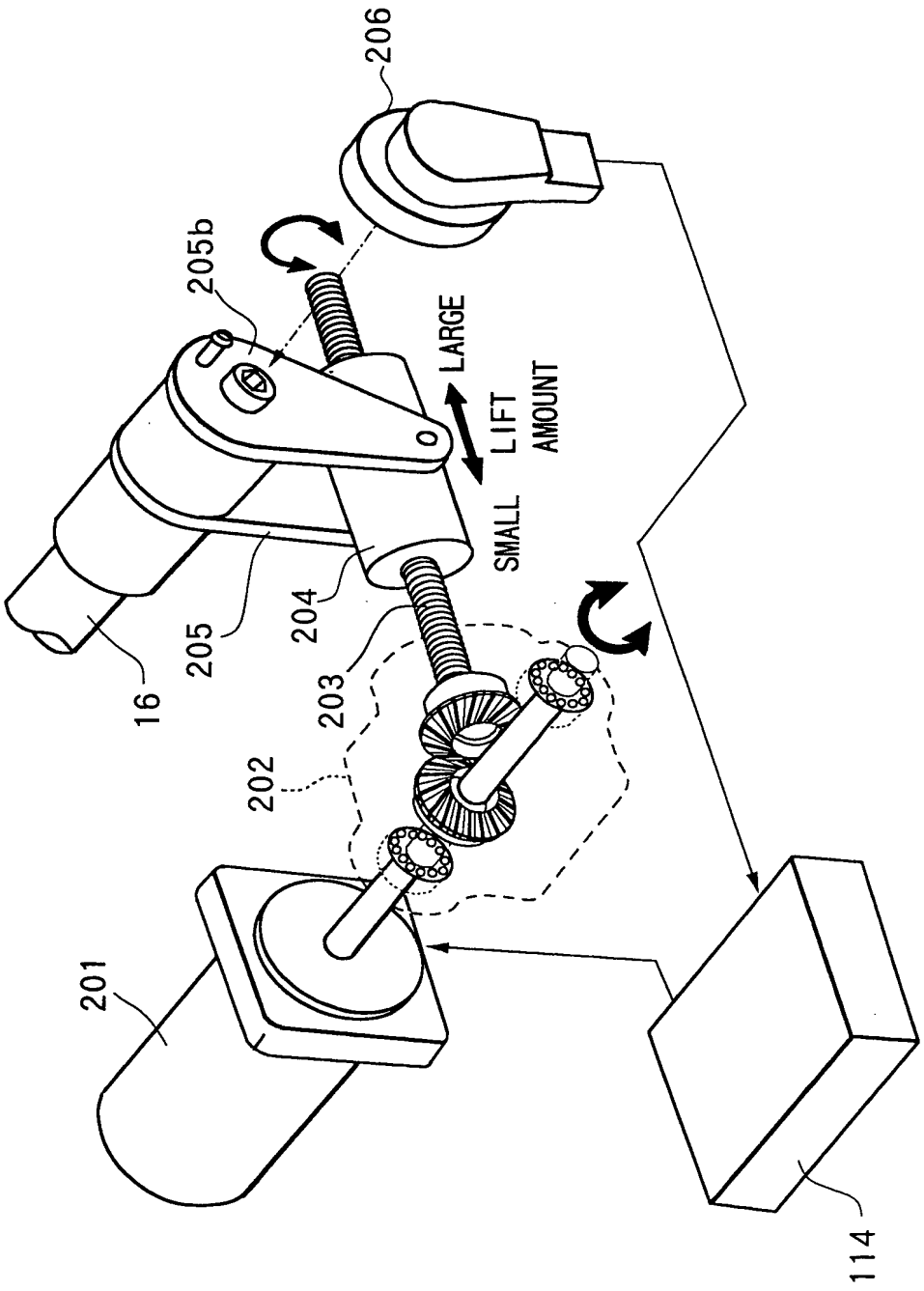


FIG.11

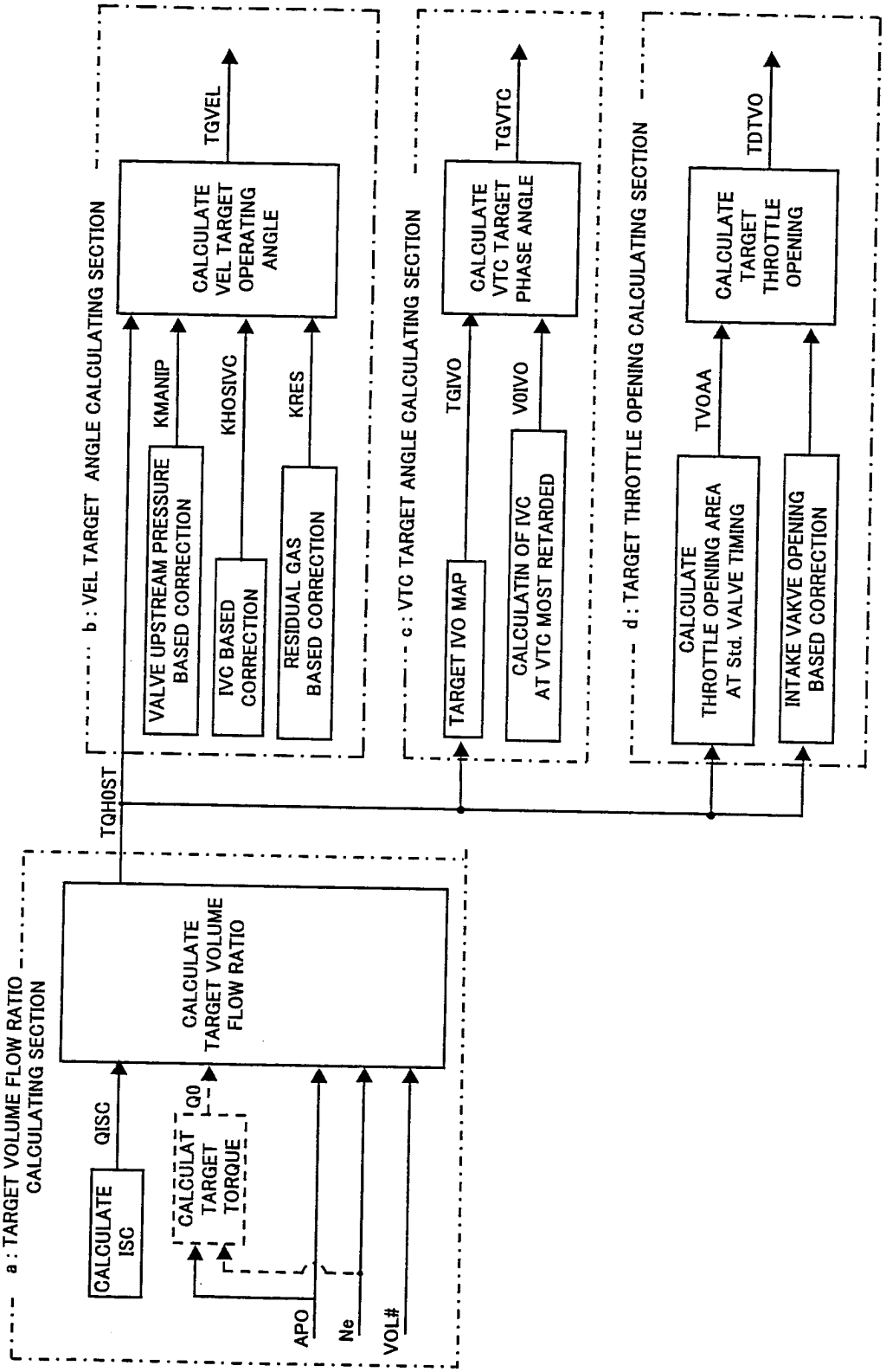

a : TARGET VOLUME FLOW RATIO CALCULATING SECTION
CALCULATE ISC
QISC
CALCULATE TARGET TORQUE
Q0
APO
Ne
VOL#
CALCULATE TARGET VOLUME FLOW RATIO
TQH0ST
b : VEL TARGET ANGLE CALCULATING SECTION
VALVE UPSTREAM PRESSURE BASED CORRECTION
KMANIP
IVC BASED CORRECTION
KHOSIVC
RESIDUAL GAS BASED CORRECTION
KRES
CALCULATE VEL TARGET OPERATING ANGLE
TGVEL
c : VTC TARGET ANGLE CALCULATING SECTION
TARGET IVO MAP
TGIVO
CALCULATIN OF IVC AT VTC MOST RETARDED
V0IVO
CALCULATE VTC TARGET PHASE ANGLE
TGVTC
d : TARGET THROTTLE OPENING CALCULATING SECTION
CALCULATE THROTTLE OPENING AREA AT Std. VALVE TIMING
TVOAA
INTAKE VAKVE OPENING BASED CORRECTION
CALCULATE TARGET THROTTLE OPENING
TDTVO

FIG.12

(b-1) SETTING OF VEL TARGET OPERATING ANGLE "TGVEL"

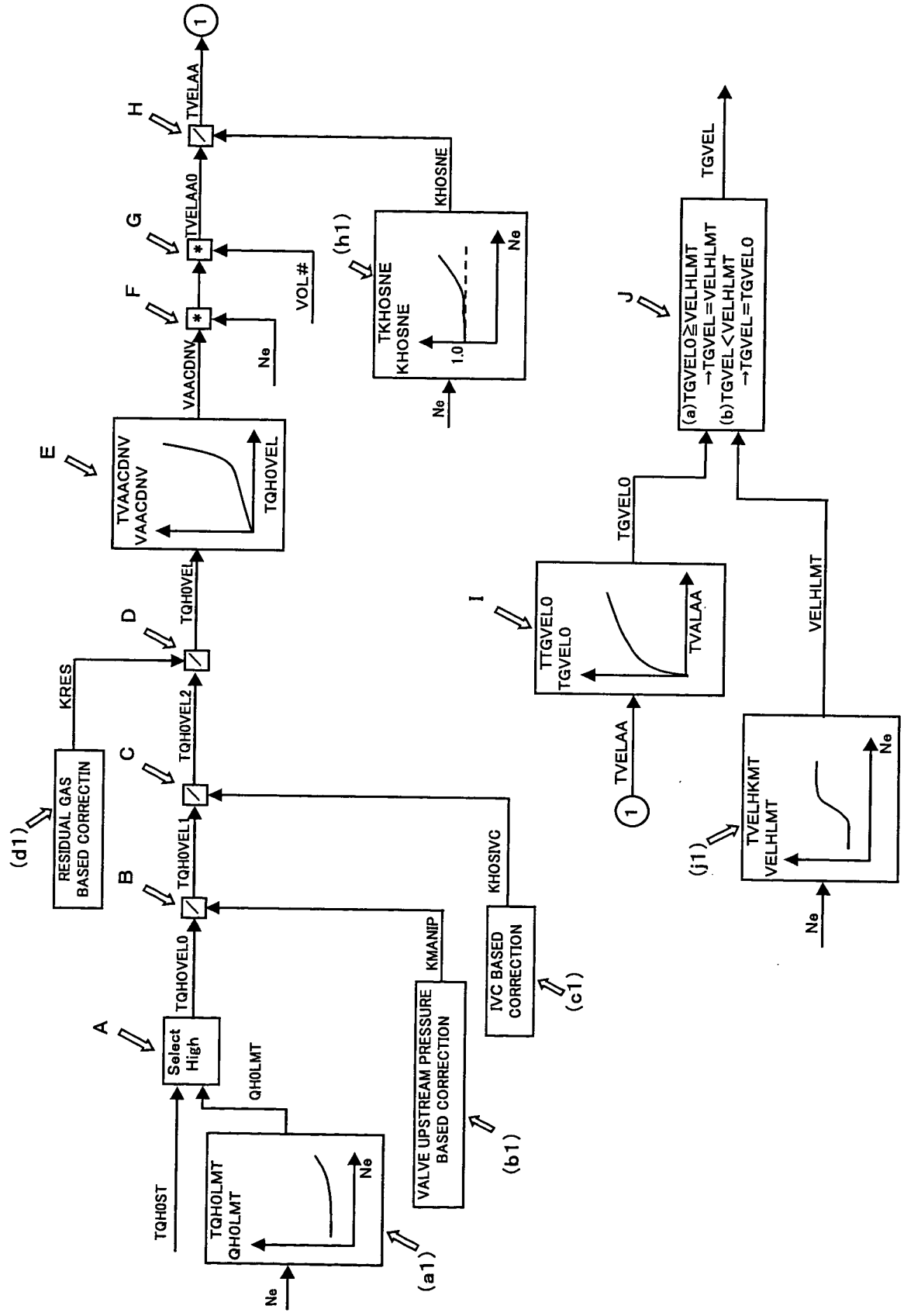


FIG.13

(b−2) SETTING OF VALVE UPSTREAM PRESSURE BASED CORRECTION VALUE "KMANIP"

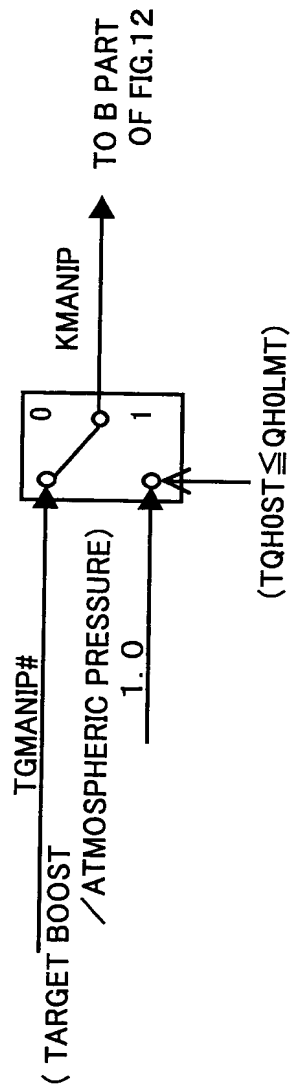


FIG.14

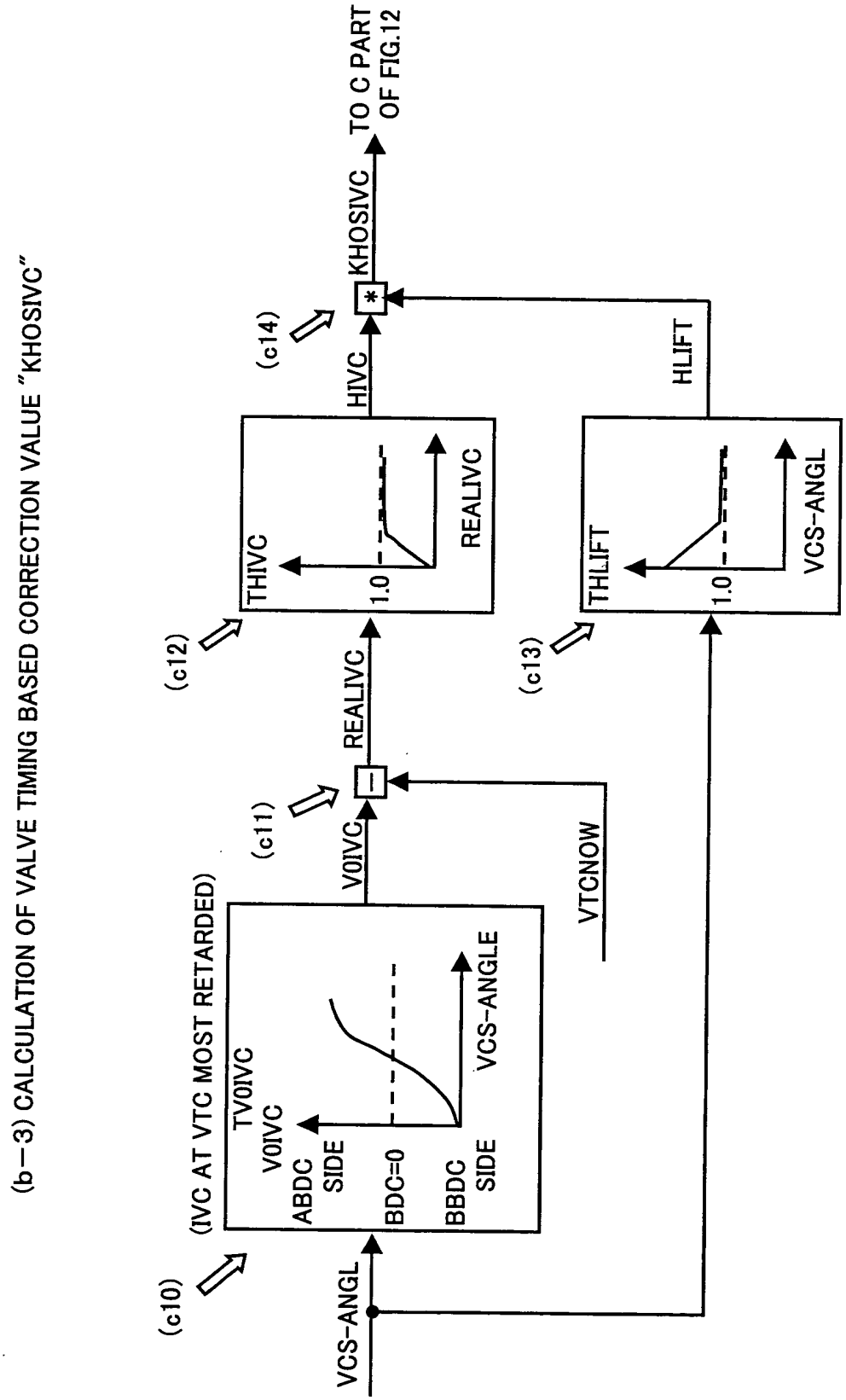

(b−3) CALCULATION OF VALVE TIMING BASED CORRECTION VALUE "KHOSIVC"
VCS-ANGL
(c10)
(IVC AT VTC MOST RETARDED)
TV0IVC
V0IVC
ABDC
SIDE
BDC=0
BBDC
SIDE
VCS-ANGLE
V0IVC
(c11)
−
REALIVC
VTCNOW
(c12)
THIVC
1.0
REALIVC
HIVC
(c14)
*
KHOSIVC
TO C PART
OF FIG.12
(c13)
THLIFT
1.0
VCS-ANGL
HLIFT

FIG.15

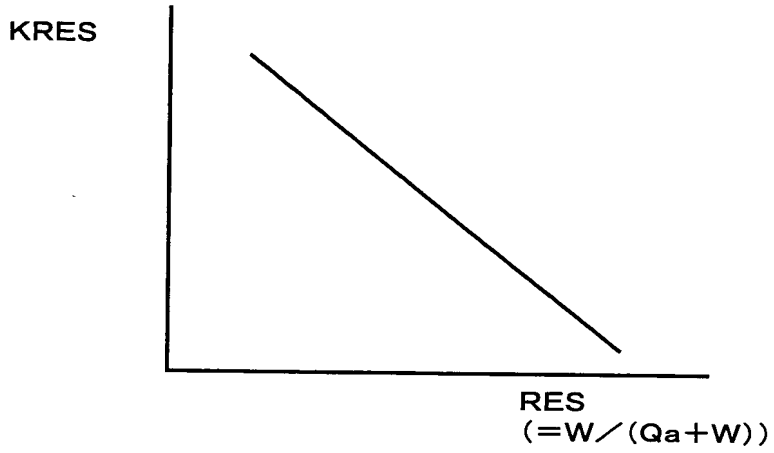


FIG.16

(c) SETTING OF VTC TARGET (PHASE) ANGLE "TGVTC"

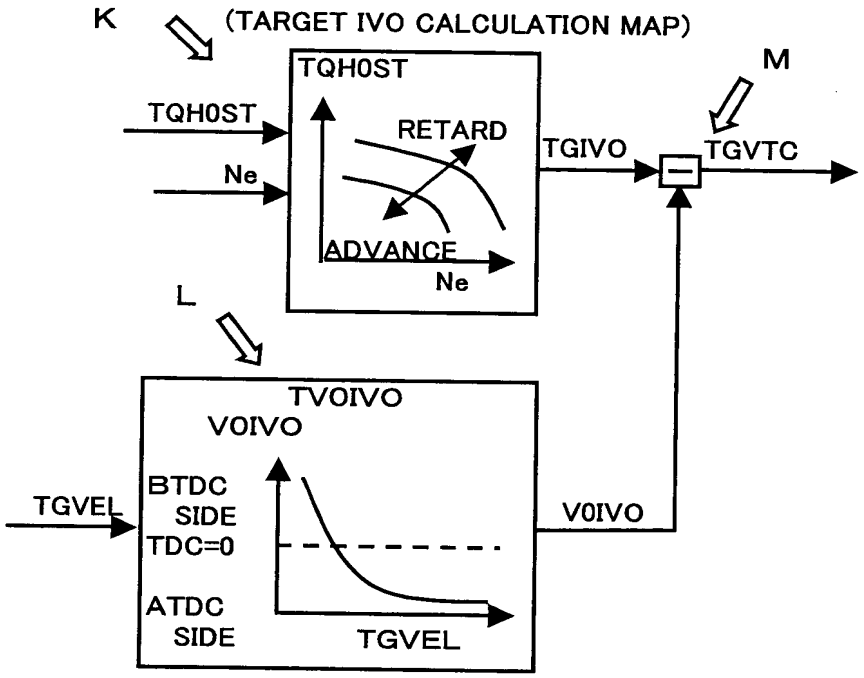


FIG.17

(d−1) SETTING OF TARGET THROTTLE OPENING "TDTVO"

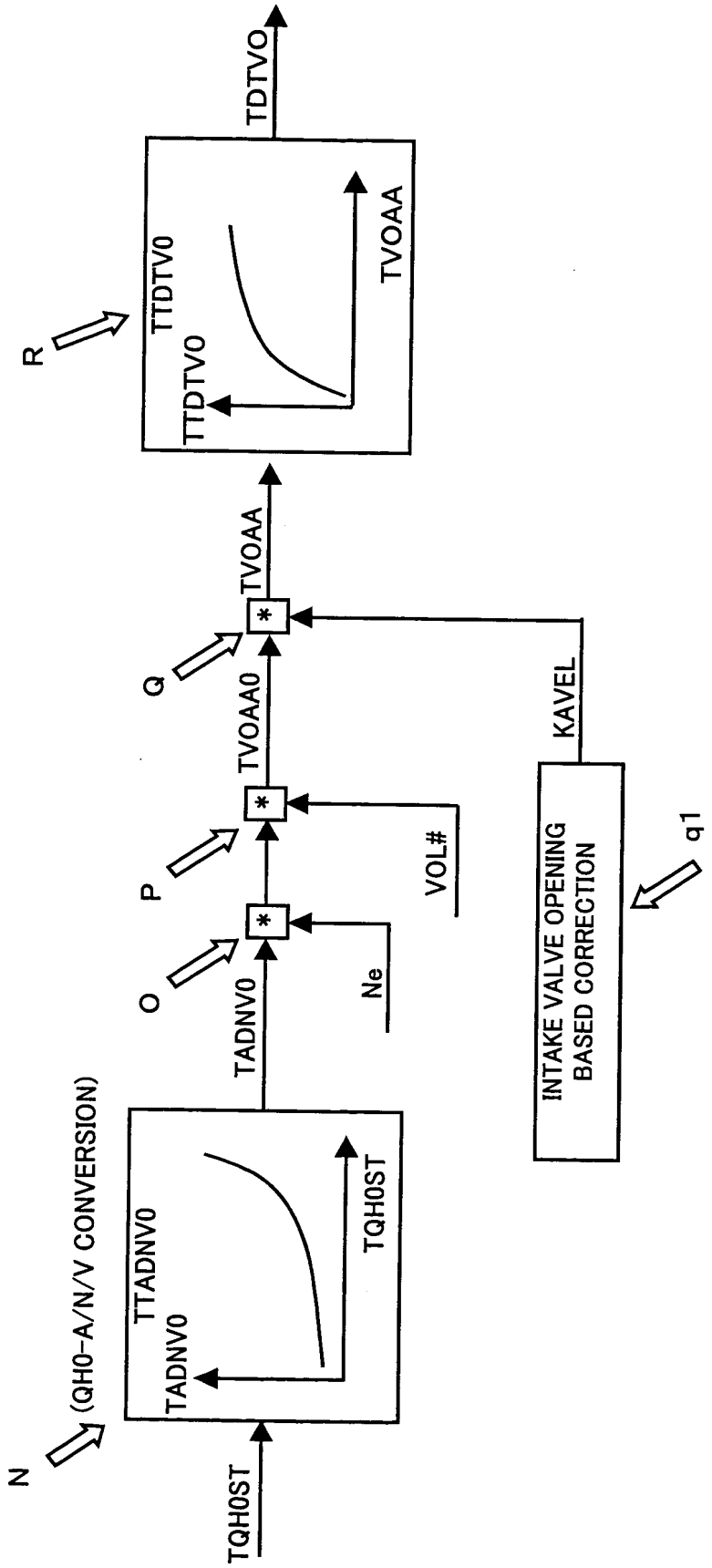


FIG.18

(d−2) CALCULATION OF INTAKE VALVE OPENING BASED CORRECTION VALUE "KAVEL"

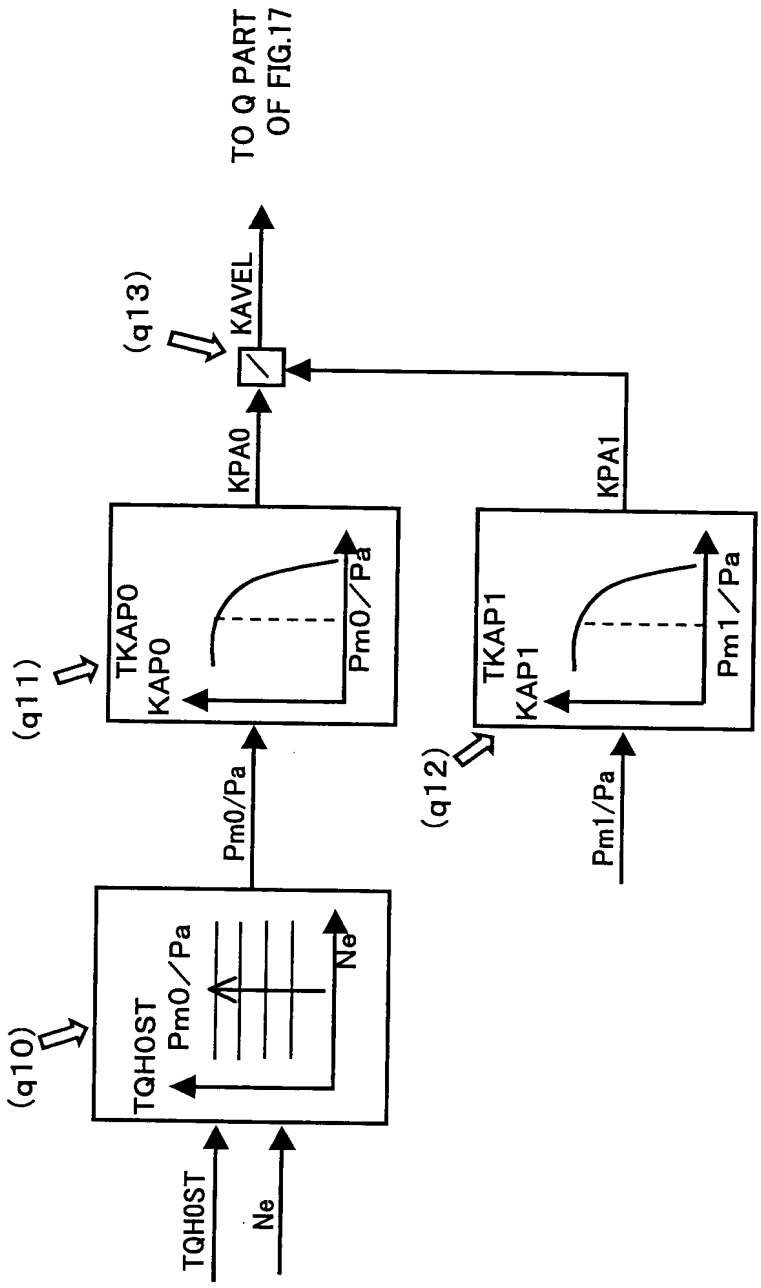


FIG.19

(d−3) CALCURATION OF PRESSURE RATIO(Pm1／Pa)
AT THE TIME WHEN VEL OPERATES

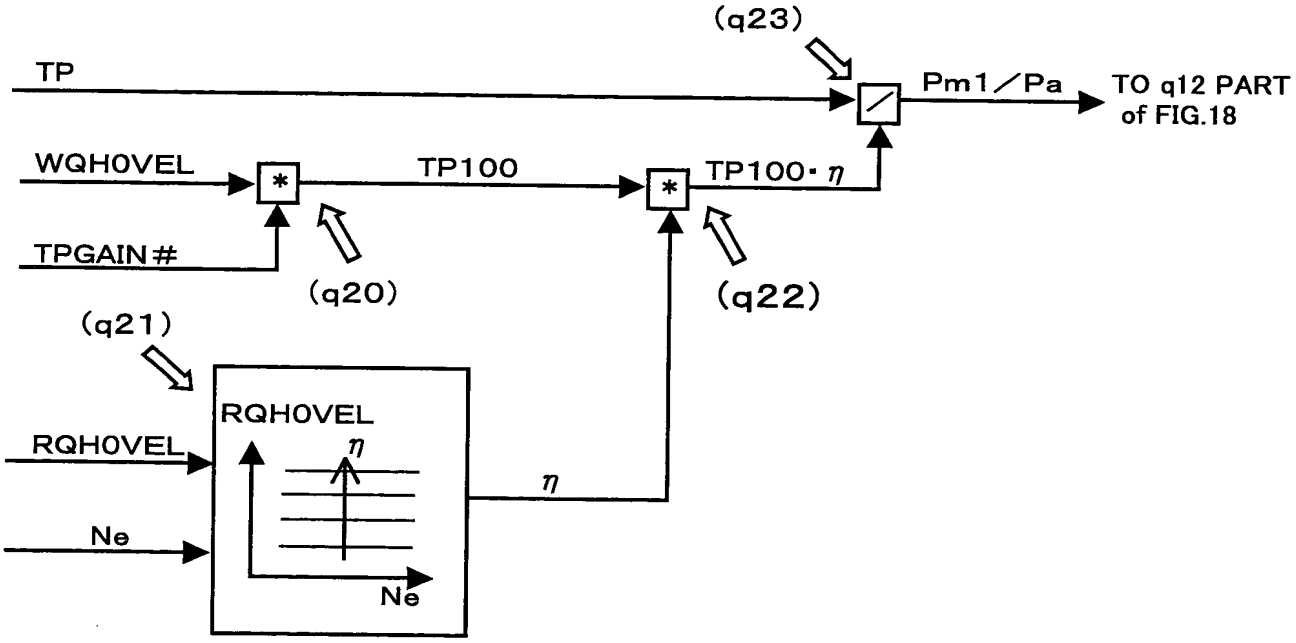
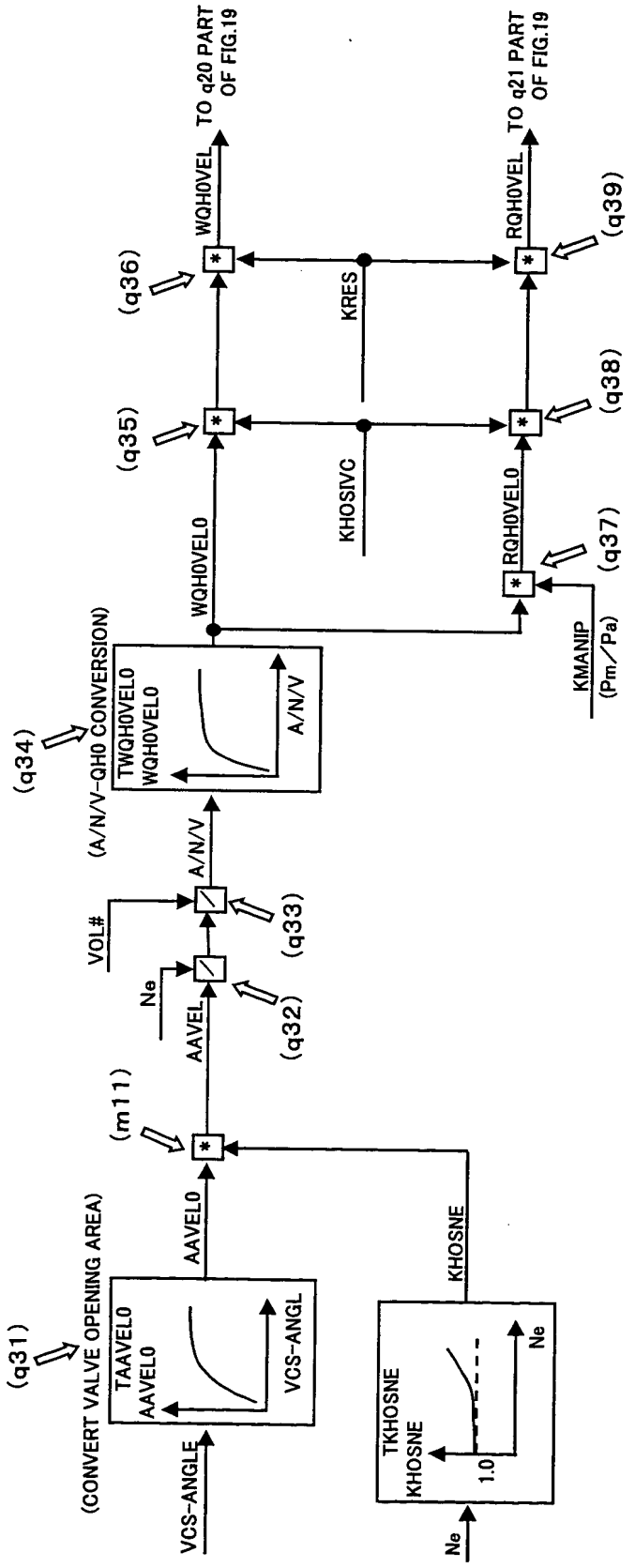


FIG.20

(d-4) CALCULATION OF RATIO "WQH0VEL","RQH0VEL" OF VOLUME FLOW PASSED THROUGH INTAKE VALVE